

<b>Notice of Allowability</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/084,968	ONO ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Christina Y. Leung	2633	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to application filed 01 March 2002 and response filed 08 April 2005.
2. ☒ The allowed claim(s) is/are 1-14.
3. ☒ The drawings filed on 21 August 2002 are accepted by the Examiner.
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☒ All    b) ☐ Some\*    c) ☐ None    of the:
    1. ☒ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

- |  |  |
|--|--|
| 1. <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)            |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 6. <input type="checkbox"/> Interview Summary (PTO-413),<br>Paper No./Mail Date _____. |
| 3. <input checked="" type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),<br>Paper No./Mail Date <u>21 August 2002</u> | 7. <input type="checkbox"/> Examiner's Amendment/Comment                               |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit<br>of Biological Material                                     | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance   |
|  | 9. <input type="checkbox"/> Other _____.   |

## DETAILED ACTION

### *Priority*

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

### *Election/Restrictions*

2. Applicants' election of species I, corresponding to claims 1, 3-5, 7, 8, and 11 in the reply filed on 08 April 2005 is acknowledged. Because Applicants did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

3. Examiner respectfully disagrees with Applicants' assertion that claims 3 and 4 are generic to all claims. Claims 3 and 4 are not generic to all claims because the limitations in those claims are not necessarily recited/included in the other claims. See MPEP § 806.04 (d). For example, claims 1 and 2 each recite "performing chirpless  $0-\pi$  optical phase modulation on carrier wave light in accordance with a required data signal in order to generate a single-sideband optical signal" but does not specifically require that generating a single-sideband optical signal further includes the steps and limitations recited in claims 3 or 4.

4. However, claims 3 and 7 are generic to their respective dependent claims and because claims 3 and 7 are allowable, the restriction requirement as to their respective dependent claims is hereby withdrawn. Claims 6, 9, 10, and 12-14, directed to the species of Figures 10, 11, and 12 are no longer withdrawn from consideration since all of these claims depend from or otherwise include each of the limitations of an allowed generic claim.

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5. Furthermore, independent claim 2 is no longer withdrawn from consideration since it is directed to the same species (Figure 10) as claim 13 which is now considered.

6. Therefore, the restriction requirement is withdrawn with respect to all claims (claims 1-14) and all claims are no longer withdrawn from consideration.

7. In view of the above noted withdrawal of the restriction requirement as to the linked species, Applicants are advised that if any claim(s) depending from or including all the limitations of the allowable generic linking claim(s) be presented in a continuation or divisional application, such claims may be subject to provisional statutory and/or nonstatutory double patenting rejections over the claims of the instant application. Once a restriction requirement is withdrawn, the provisions of 35 U.S.C. 121 are no longer applicable. See *In re Ziegler*, 44 F.2d 1211, 1215, 170 USPQ 129, 131-32 (CCPA 1971). See also MPEP § 804.01.

***Allowable Subject Matter***

8. Claims 1-14 are allowed.

9. The following is an examiner's statement of reasons for allowance:

The prior art does not specifically disclose or fairly suggest a method for generating a single-sideband optical signal including all the steps, elements, and limitations recited in claims 1 or 2, particularly wherein chirpless  $0-\pi$  optical phase modulation is performed on carrier wave light to generate a single-sideband optical signal; the generated single-sideband optical signal is passed through an optical filter; and the center frequency of the optical filter or the oscillation frequency of the carrier wave is controlled so that the magnitude of a residual intensity-modulated component from the detected single-sideband optical signal is always minimized.

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The prior art also does not specifically disclose or fairly suggest a method for generating a single-sideband optical signal including all the steps, elements, and limitations recited in claim 3, particularly including the step of generating a bit-delay data signal having a delay corresponding to  $\pi/2$  of a bit period of the required data signal inputted and performing chirpless  $0-\pi$  optical phase modulation on a second carrier wave light in accordance with the bit-delay data signal using a second optical phase modulator in order to generate second phase modulated light that is combined with first phase-modulated light generated in accordance with the undelayed data signal, in order to generate a single-sideband optical signal.

The prior art also does not specifically disclose or fairly suggest a circuit for generating a single-sideband optical signal including all the steps, elements, and limitations recited in claim 7, particularly including a first Mach-Zehnder interferometer having second and third Mach-Zehnder interferometers integrated in two arms thereof in combination with a delay circuit for delaying a data signal supplied to the third Mach-Zehnder interferometer by appropriate bit rate in accordance with a data signal supplied to the second Mach-Zehnder interferometer.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### ***Conclusion***

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Sasai et al. (US 6,459,519 B1; Figures 1 and 2), Webb (US 6,766,116 B1; Figure 2), and Peral et al. (US 2002/0076132 A1; Figure 1) each generally disclose filtering a signal having double sideband modulation.


Olshansky (US 5,301,058 A; Figure 10), Gnauck et al. (US 6,661,976 B1; Figure 5), and Way et al. (US 6,525,857 B1; Figure 5C) each generally disclose various implementations of single sideband modulators with interferometers but they do not specifically disclose the delay circuit or controlling a filter or carrier wave as recited in the claims.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christina Y. Leung whose telephone number is 571-272-3023. The examiner can normally be reached on Monday to Friday, 6:30 to 3:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on 571-272-3022. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306 until July 15, 2005; on or after July 15, 2005, the fax number is 571-273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 571-272-2600.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
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